

CLAIMS

What is claimed is:

1. A magnetic head parking system of a hard disk drive to move a magnetic head mounted on a slider of an actuator from a data zone of a disk and to place the magnetic head in a parking zone of the disk when the disk stops rotating, the hard disk drive including a spindle motor with a flange thereof to rotate the disk, the magnetic head parking system comprising:

a head limiter provided on an upper surface of the flange of the spindle motor to protrude toward the disk and restricting a range of movement in upward and downward directions of the magnetic head placed in the parking zone of the disk.

2. The system as claimed in claim 1, wherein the head limiter is provided at a position opposite to a position where the slider of the actuator is installed.

3. The system as claimed in claim 2, wherein the head limiter is provided at a position deviated from a position directly under the slider.

4. The system as claimed in claim 2, wherein:

the actuator comprises a suspension to support the slider thereon; and

the head limiter is formed larger in a width thereof than a width of the suspension.

5. The system as claimed in claim 2, wherein the actuator comprises:

a suspension to support the slider thereon, and

when the magnetic head lands on a surface of the disk, an interval between the head limiter and the suspension is in a range of about 0.3 mm to 0.6 mm.

6. The system as claimed in claim 1, wherein the head limiter comprises:

an upper curved surface.

7. The system as claimed in claim 1, wherein the head limiter is formed integrally with the flange.

8. The system as claimed in claim 7, further comprising:
a buffer member, wherein the head limiter comprises:
an upper curved surface attached to the buffer member.

9. The system as claimed in claim 1, wherein the head limiter installed on the upper surface of the flange comprises:
a material having a buffering ability.

10. A magnetic head parking system of a hard disk drive to move a magnetic head mounted on an actuator from a data zone to a parking zone of a disk when the disk mounted on a mounting surface stops rotating, comprising:

a head limiter protruding toward the disk from the mounting surface and restricting a range of movement, in directions toward and away from the mounting surface, of the magnetic head located in the parking zone of the disk.

11. The system as claimed in claim 10, further comprising:
a slider coupled at opposite ends thereof to the magnetic head and to the actuator, respectively.

12. The system as claimed in claim 11, wherein the head limiter is provided at a position opposite to a position where the slider is disposed.

13. The system as claimed in claim 11, wherein the head limiter is provided at a position deviated from and/or adjacent to a position directly opposite the slider.

14. The system as claimed in claim 11, wherein the actuator comprises:
a suspension to support the slider thereon.
15. The system as claimed in claim 14, wherein the head limiter is disposed under the suspension at any position opposite to a position where the slider is disposed.
16. The system as claimed in claim 15, wherein the range of movement of the suspension is restricted in accordance with the position of the head limiter.
17. The system as claimed in claim 16, wherein the magnetic head located at the end portion of the suspension is limited within a predetermined range of movement.
18. The system as claimed in claim 14, wherein the head limiter is formed larger in a width thereof than a width of the suspension.
19. The system as claimed in claim 14, wherein an entire width of the suspension is contactable with the head limiter at a contact portion between the suspension and the head limiter.
20. The system as claimed in claim 11, wherein the actuator comprises:
a pivot shaft;
an arm pivotably coupled to the pivot shaft; and
a suspension installed at the arm to support the slider on which the magnetic head is mounted, the suspension being elastically biased toward a surface of the disk.
21. The system as claimed in claim 11, wherein, when the magnetic head lands on a surface of the disk, an interval between the head limiter and the suspension is in a range of about 0.3 mm to 0.6 mm.

22. The system as claimed in claim 10, wherein the head limiter comprises:
an upper curved surface.
23. The system as claimed in claim 10, wherein the head limiter is formed integrally
with the mounting surface.
24. The system as claimed in claim 23, further comprising:
a buffer member having a predetermined thickness, wherein the head limiter comprises:
an upper curved surface attached to the head limiter.
25. The system as claimed in claim 24, wherein the buffer member is made of rubber
or synthetic resin having a buffering ability.
26. The system as claimed in claim 24, wherein the buffer member is attached to the
upper surface of the head limiter by an adhesive or mechanically coupled thereto.
27. The system as claimed in claim 24, wherein the buffer member having a buffering
ability is provided in a profile of a convex shape.
28. The system as claimed in claim 10, wherein the head limiter installed on the
mounting surface comprises:
a material having a buffering ability.
29. A magnetic head parking system of a hard disk drive to move a magnetic head
mounted on an actuator from a data zone to a parking zone of a disk, comprising:
a mounting surface of the hard disk drive to mount the disk thereon comprising:
a first stepped surface portion; and

a second stepped surface portion, such that the first stepped surface portion is formed lower than a second stepped surface portion to prevent interference with the actuator when moving the actuator.

30. A magnetic head parking system of a hard disk drive to move a magnetic head mounted on an actuator from a data zone to a parking zone of a disk when the disk mounted on a mounting surface stops rotating, comprising:

a head limiter protruding toward the disk from the mounting surface and restricting a range of movement to prevent a head slap of the magnetic head located in the parking zone of the disk.